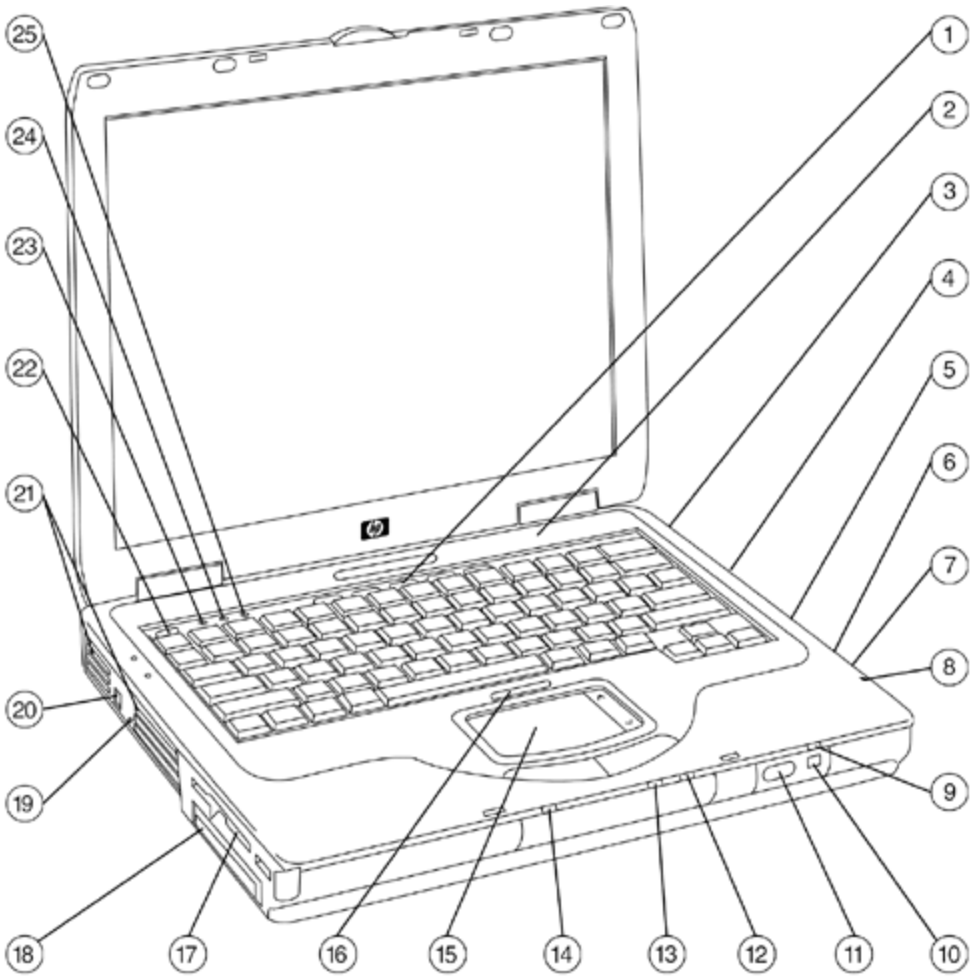
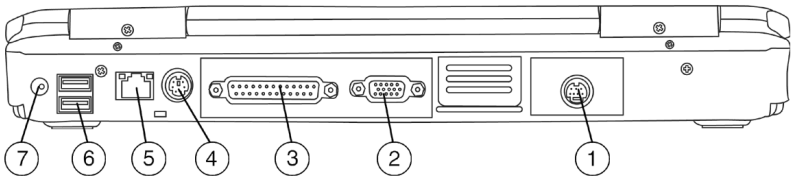
Overview



1. Easy Access Buttons (5)
2. Stereo Speakers
3. USB Port (1)
4. Fixed Optical Drive
5. Audio In
6. Headphone
7. Volume Control
8. Mute Lock LED
9. Wireless LED
10. Wireless On/Off Button
11. Fast IR
12. Battery Charging LED
13. Hard Drive Activity LED
14. System Drive LED
15. Touch Pad
16. Touch Pad On/Off Button
17. Diskette Drive
18. PC Card Slot (1)
19. 1394 Port
20. RJ-11 (Modem)
21. Air Vents
22. Power Buttons
23. Cap Lock LED
24. Num Lock LED
25. Keypad LED

Overview



1. S-Video
2. VGA Video
3. Parallel Port
4. PS/2 Port
5. RJ-45 (NIC)
6. USB Ports (2)
7. DC In

At A Glance

- Mobile Intel® Pentium® 4 processors – up to 3.06 GHz
  - Intel® Celeron® processors – up to 2.8 GHz
- Microsoft® Windows® XP Professional or
  Microsoft Windows XP Home
  NOTE: Microsoft Windows 2000 driver support via web.
- 15-inch TFT XGA display
- Configurations as light as 7.07 lb/3.2 kg and as thin as 1.73 in/4.39 cm (14-inch panel)
- 256MB or 512MB DDR SDRAM (266 MHz), Upgradeable to 1GB
- Up to 80 GB (4200 rpm) hard drive
- Integrated NIC, high speed 56K modem, and available 802.11b and 802.11g Wireless LAN
- Full-size keyboard with 5 Quick Launch Buttons
- Includes a one-year, Worldwide Warranty – Certain restrictions and exclusions apply. Consult the HP Customer Support Center for details.

What's New

- Mobile Intel Pentium 4 processors – up to 3.06 GHz
- Intel Celeron processors – up to 2.8 GHz
- DVD+RW optical drive

What's Special

- Mobile Intel Pentium 4 and Intel Celeron processors
- All-in-one convenient design
- Powerful Proven Technology
- USB 2.0 and IEEE 1394

Standard Features

Processors and Chipset One of the following:	3.06 GHz Mobile Intel Pentium 4 processor with 533-MHz Front Side Bus and 512-KB L2 cache 2.8 GHz Mobile Intel Pentium 4 processor with 533-MHz Front Side Bus and 512-KB L2 cache 2.66 GHz Mobile Intel Pentium 4 processor with 533-MHz Front Side Bus and 512-KB L2 cache 2.8 GHz Intel Celeron with 400-MHz Front Side Bus and 256-KB L2 cache Chipset: ATI Radeon IGP 345M (RS200MP)/ALI M1535+ NOTE: Mobile Intel Pentium 4 processor supports enhanced Intel SpeedStep™ technology.	
Operating System	Microsoft Windows XP Pro, preinstalled or Microsoft Windows XP Home (limited language availability) preinstalled NOTE: Microsoft Windows 2000 Driver support via web.	
Displays	Internal	15-inch color TFT XGA with 1024 x 768 resolution (up to 16.7M colors internal)
	External	Up to 32-bit per pixel color depth. Supports 640 x 480, 800 x 600, 1024 x 768, 1280 x 768, 1280 x 1024, or 1600 x 1200 resolutions up to 100-Hz refresh rate, dependent upon monitor capability, and resolution and color depth settings
Memory	Standard	256 MB (266 MHz) DDR SDRAM (256 MB SODIMM in slot 1) or 512 MB (266 MHz) DDR SDRAM (256 MB SODIMM in slots 1 and 2)
	Maximum	1 GB (266 MHz) DDR SDRAM (512MB (266 MHz) in slots 1 and 2)
	NOTE: 256MB of DDR (64MB standard shared video memory). NOTE: Up to 64MB shared video memory user configurable.	
Communications	10/100 NIC is integrated on the system board Integrated high speed 56K modem 802.11b on select models 802.11g on select models Wireless on/off Button	
Keyboard	Full-size desktop-compatible keyboard; special feature hotkeys for instant access to toggling between internal and external displays, or simultaneous displays and brightness. Oversized keys and separate cursor control keys (87 keys) – 101-key compatible.	
Easy Access Buttons	Five – One Touch Quick Launch Buttons	
Pointing Device	Touch pad with on/off button and dedicated scroll up/down surface	
PC Card Slots	One Type II PC Card slot with support for 16-bit PCMICIA and 32-bit Cardbus.	

Standard Features

Storage	Fixed Diskette Drive	1.44 MB Diskette Drive
	Primary Hard Drive	80-GB 4200 rpm SMART Ultra ATA Hard Drive 60-GB 4200 rpm SMART Ultra ATA Hard Drive 40-GB 4200 rpm SMART Ultra ATA Hard Drive 30-GB 4200 rpm SMART Ultra ATA Hard Drive
	Fixed Optical Drive	DVD/CD-RW combo Drive DVD Drive CD Drive DVD+RW Drive

Audio	Integrated Speakers, Volume control & Mute buttons, AC/97, SoundBlaster Pro compatible, 16 bit stereo sound

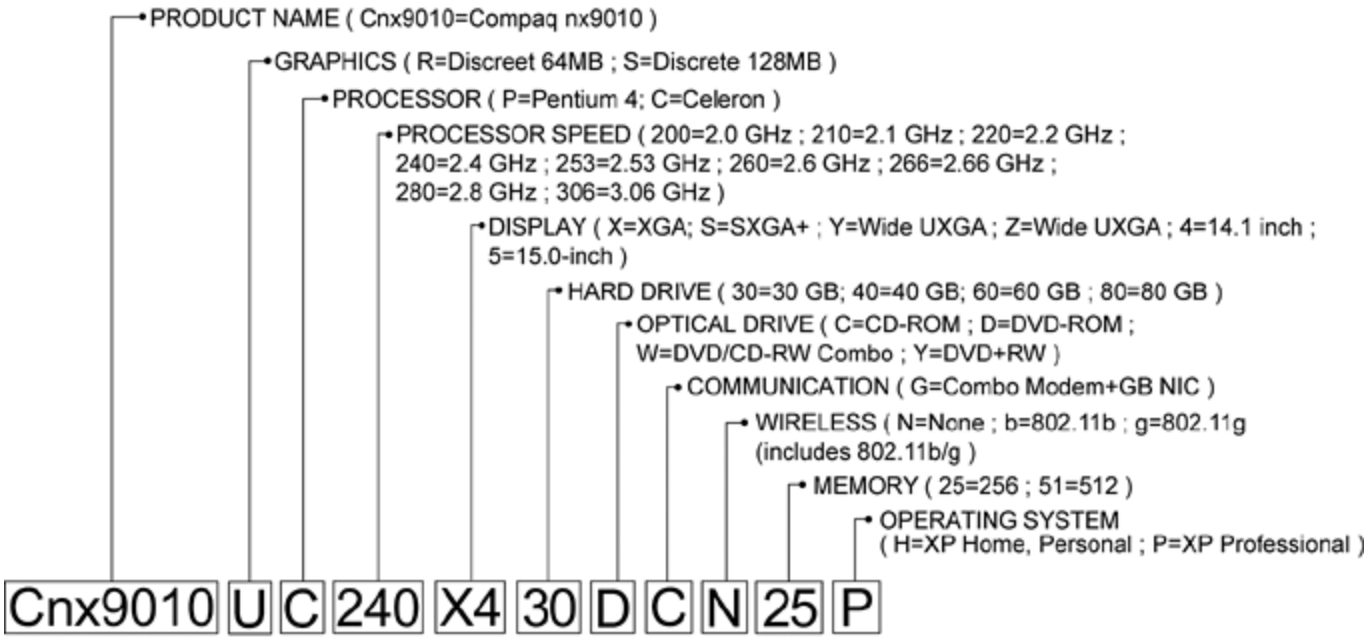
Multimedia	Dual Speakers and 16-bit stereo sound Dedicated Hardware and Hotkey volume controls Headphone-out port Microphone-in port Software MPEG1 support, MPEG2 and DVD DVD/CD-RW Combination Drive (on select models) DVD-ROM Drive with movie playback software (on select models) CD-ROM Drive (on select models) S-video Port IEEE 1394 Port (on select models) USB 2.0 Ports (on select models) 4X AGP graphics 64MB of DDR (Double Date Rate) shared video memory

Interfaces	PC Card	1 Type 1/II
	Enhanced Parallel EPP/ECP	1
	PS/2	1
	S-Video (NTSC/PAL)	1
	VGA	1
	1394 - select models	1
	Port Replicator – select models	1
	Headphone/Line-out	1
	Microphone-in	1
	DC Power	1
	RJ-11 (modem)	1
	RJ-45 (NIC)	1
	Infrared Port – select models	1 (4 Mb/s support) (IrDA 4 MB compliant. IR performance will vary depending on performance of IR peripherals and application used.)
	USB 2.0	3
	LED status indicators	8 • System power • Battery charging • Hard drive activity • Caps lock • Num lock • Keypad • Wireless • Mute Lock

Standard Features

Graphics	UMA architecture – ATI Mobility™ Radeon™, AGP 4x and 3D Architecture, MPEG2 and DVD playback, standard 16MB shared w/128MB main memory, 64MB shared w/256MB or more main memory, configurable up to 64MB.
Software	Intervideo WinDVD Playback Software Roxio Easy CD Creator (on CDRW, DVD/CDRW) Safety and Comfort Guide Acrobat Reader Reference Guide One touch button software Symantec Norton Anti-virus HP Help and Support Microsoft Office on select models NOTE: Symantec Norton Antivirus 2003 (Complimentary 60 days Live Update).
System Recovery	Each unit is shipped with a recovery CD kit containing a system restore and Operating System CD. These CDs allow users to either recover or repair the notebook operating system without losing personal data. The Operating System CD also provides the option of reinstalling the operating system software provided with the notebook. (erases hard disk and restores the manufacturer installed image).
Security	Power-on Password Kensington MicroSave security slot; accepts 3rd party security lock devices
Power Supply	External 90-Watt AC adapter, power cord included.
Battery	The HP Compaq Business Notebook nx9010 provides up to 2 hours of battery life using the standard 8-cell Lithium-Ion battery, 4.4Ahr and Smart Battery Technology (provides accurate, instantaneous battery status). NOTE: Actual results may vary with product model, configuration, and individual usage. Hewlett-Packard testing of a HP Compaq nx9010 with an Intel Celeron 2.0 GHz + CPU, Windows XP Pro, 15.0-inch XGA LCD, 256 MB RAM, 20-GB HDD, DVD, Lithium-Ion battery, and NIC/modem, achieved an overall Business Winstone 2002 BatteryMark score of **2h 20m** Business Winstone® 2002 BatteryMark™ Version 1.0 units. Winstone® is a registered trademark and BatteryMark™ is a trademark of Ziff Davis Publishing Holdings Inc. in the U.S. and other countries. Copyright 2002 Ziff Davis Media Inc. All Rights Reserved. System parameters followed test recommendations: panel brightness 50%, power management scheme - Laptop/Portable, hard drive, standby and video timers set to never. NOTE: This test was performed without independent verification by eTesting Labs Inc. eTesting Labs Inc. makes no representations or warranties as to the result of the test. BatteryMark is a trademark of Ziff Davis Publishing Holdings Inc., and affiliate of eTesting Labs Inc., in the U.S. and other countries.
Power Conservation	Hibernation Instant-on via Standby One custom level of power conservation Energy Star Compliant
Service and Support	HP Services includes a one-year, Worldwide Limited Warranty, pick-up or carry-in; upgraded warranty and toll-free 7 x 24 hardware technical phone support available. NOTE: Certain restrictions and exclusions apply. Consult the HP Customer Support Center for details.

Standard Features



Models

Cnx9010UP280X540WCg25P
P/N DV134U#ABA

Processor	Intel Pentium 4 2.8GHz
Operating System	Microsoft Windows XP Pro
Display	15-inch color TFT XGA
Cache Memory	512 KB, L2 Cache
Standard Memory	256 MB (1 DIMM) 266 MHz DDR
Maximum Memory	1024 MB (266 MHz) DDR
Hard Drive	40 GB
Optical Drive	DVD/CD-RW Drive
Diskette Drive	1.44MB Diskette Drive
Communications	Type III Mini PCI high speed 56K modem, (LOM) integrated 10/100 NIC, Integrated 802.11g WLAN
Graphics	ATI Radeon IGP 345M Integrated UMA architecture ATI 4X AGP 3D accelerator
Audio	16-bit stereo sound integrated speakers
Warranty	One Year

Standard Features

Cnx9010UP306X540WCg51P
P/N DV135U#ABA

Processor	Intel Pentium 4 3.06GHz
Operating System	Microsoft Windows XP Pro
Display	15-inch color TFT XGA
Cache Memory	512 KB, L2 Cache
Standard Memory	512 MB (2 DIMM) 266 MHz DDR
Maximum Memory	1024 MB (266 MHz) DDR
Hard Drive	40 GB
Optical Drive	DVD/CD-RW Drive
Diskette Drive	1.44MB Diskette Drive
Communications	Type III Mini PCI high speed 56K modem, (LOM) integrated 10/100 NIC, Integrated 802.11g WLAN
Graphics	ATI Radeon IGP 345M Integrated UMA architecture ATI 4X AGP 3D accelerator
Audio	16-bit stereo sound integrated speakers
Warranty	One Year

Cnx9010UP306X560YCg51P
P/N DH939U#ABA

Processor	3.06GHz Mobile Intel Pentium 4
Operating System	Microsoft Windows XP Pro
Display	15-inch color TFT XGA
Cache Memory	512 KB, L2 Cache
Standard Memory	512 MB (2 DIMM) 266 MHz DDR
Maximum Memory	1024 MB (266 MHz) DDR
Hard Drive	60 GB
Optical Drive	DVD+RW Drive
Diskette Drive	1.44MB Diskette Drive
Communications	Type III Mini PCI high speed 56K modem, (LOM) integrated 10/100 NIC, Integrated 802.11g WLAN
Graphics	ATI Radeon IGP 345M Integrated UMA architecture ATI 4X AGP 3D accelerator
Audio	16-bit stereo sound integrated speakers
Warranty	One Year

Standard Features

Cnx9010UP280X530WCg25P
P/N PG475UA#ABA

Processor	Intel Pentium 4 2.8GHz
Operating System	Microsoft Windows XP Pro
Display	15-inch color TFT XGA
Cache Memory	512 KB, L2 Cache
Standard Memory	256 MB (1 DIMM) 266 MHz DDR
Maximum Memory	1024 MB (266 MHz) DDR
Hard Drive	30 GB
Optical Drive	DVD/CD-RW Drive
Diskette Drive	None
Communications	Type III Mini PCI high speed 56K modem, (LOM) integrated 10/100 NIC, Integrated 802.11g WLAN
Graphics	ATI Radeon IGP 345M Integrated UMA architecture ATI 4X AGP 3D accelerator
Audio	16-bit stereo sound integrated speakers
Warranty	One Year

Options

Storage	HP USB Digital Drive	DL702B
Memory	256MB (333 MHz) DDR RAM Memory Upgrade	DC389B
	512MB (333 MHz) DDR RAM Memory Upgrade	DC390B
	1024MB (333MHz) DDR Memory Upgrade	DC890B
Expansion	Simple Port Replicator (USB 2.0)	F4808B
Power	Primary Battery Pack	F4809A
	AC Adapter 90W	F4813A#ABA
	Auto/Truck Adapter 90W	DC303B
Carrying Cases	HP Executive Nylon Case	DC916A
	HP Top Load Nylon Carrying Case	DC915A
	HP Top Load Leather Carrying Case	DC917A
Security	Security Cable Lock	294316-B21
Input/Output Devices	External 10-Key Numeric Keypad (PS/2)	294317-B21
	USB/PS2 Keyboard	118003-009
	USB/PS2 Mouse	103180-B22
	USB Travel Mouse	F2100A

HP Compaq nx9010 Business Notebook

Standard Memory Plus Optional Memory

Support for up to 1024 MB total of DDR SDRAM memory is available with the installation of optional DDR SDRAM Memory Kits.

Memory	Slot 1	Slot 2
256 MB	256 MB	-
384 MB	256 MB	128 MB
512 MB	512 MB	-
768 MB	512 MB	256 MB
1024 MB	512 MB	512 MB

NOTE: This chart does not represent all possible memory configurations. Due to the non-industry standard nature of some third-party memory modules, we strongly recommend using only Compaq branded memory modules to ensure compatibility.

Following are memory options available from Compaq:

- 1024-MB (333 MHz) Memory Upgrade DC890B
- 512-MB (333 MHz) Memory Upgrade DC390B
- 256-MB (333 MHz) Memory Upgrade DC389B

Drive Support

System Drive Support	Quantity Supported	Drive Supported
1.44-MB Diskette Drive	1	Dedicated diskette drive
DVD/CD-RW Combo Drive	1	Dedicated optical drive
DVD+RW Drive	1	Dedicated optical drive
DVD-ROM Drive	1	Dedicated optical drive
Max CD-ROM Drive	1	Dedicated optical drive

Hard Drives		
80-GB Hard Drive	1	Dedicated hard drive bay
60-GB Hard Drive	1	Dedicated hard drive bay
40-GB Hard Drive	1	Dedicated hard drive bay
30-GB Hard Drive	1	Dedicated hard drive bay

System Unit	**Dimensions** (HxWxD)	14.1-inch TFT panel displays	1.73 x 12.96 x 10.72 in (4.39 x 32.92 x 27.23 cm)
		15-inch TFT panel displays	1.93 x 12.96 x 10.72 in (4.90 x 32.92 x 27.23 cm)
	Weight	14.1-inch TFT panel displays	7.07 lb (3.2 kg)
		15-inch TFT panel displays	7.69 lb (3.49 kg)
	NOTE: * = Weight varies by configuration.		
	Stand-Alone Power Requirements	Nominal Operating Voltage (Li-Ion)	14.4 V (8-cell)
		Average Operating Power	29.7 W Desktop
		Peak Operating Power	82 W on AC 55 W on DC
		Power in suspend mode	< 1000 mW
		Power in hibernation mode	< 100 mW
	Power Supply	Rated Input Voltage	100 to 240 VAC
		Rated Input Current	4.74 A
		Rated Frequency	50 to 60 Hz
	Temperature	Operating	50° to 95° F (10° to 35° C)
		Non-operating	14° to 140° F (-10° to 60° C)
	Relative Humidity	Operating	10% to 90% relative humidity, non-condensing
		Non-operating	5% to 90% relative humidity, 101.6° F (38.7° C) Maximum wetbulb temperature
	Shock	Operating	10 G, 11 ms, half-sine
		Non-operating	60 G, 11 ms, half-sine
	Vibration	Operating	0.5 G zero-to-peak, 10 to 500 Hz, 0.25 oct/min sweep rate
		Non-operating	1.0 G, zero-to-peak, 10 to 500 Hz, 0.5 oct/min sweep rate
	Maximum Altitude (unpressurized)	Operating	0 to 10,000 ft (0 to 3,048 m)
		Non-operating	0 to 30,000 ft (0 to 9,144 m)

15-Inch Color TFT XGA Display	**Dimensions** (H x W)	11.8 x 9 in (30.4 x 22.8 cm)	
	Diagonal Size	15 in (38 cm)	
	Mounting	Internal Panel Supports, Side Mounted	
	Number of Colors	Up to 16.8M	
	Contrast Ratio	150:1	
	Brightness	150nt typ	
	Pixel Resolution	Pitch	0.297 x 0.297 mm
		Format	1024 x 768
		Configuration	RGB stripe
	Backlight	Edge Lit	
	Character Display	80 x 25	
	Total Power Consumption	5.0W	
	Viewing Angle	±35° degrees Horizontal, +15°/-35° Vertical (typical)	

Hard Drives

80-GB (4200 rpm)	**Drive Weight**	0.22 lb (99 g)	
	Capacity	80 GB	
	Height	0.374 in (9.5 mm)	
	Width	70 mm	
	Interface	ATA-5	
	Transfer Rate	Synchronous (maximum)	100 MB/s (Drive Capability)
		Security	ATA Security
	Seek Time (typical reads, including settling)	Single Track	3 ms
		Average	13 ms
		Maximum	24 ms
	Rotational Speed	4200 rpm	
	Logical Blocks	156,301,488	
	Operating Temperature	41° to 131° F (5° to 55° C)	
	Features	Security	ATA Security
60-GB (4200 rpm)	**Drive Weight**	0.34 lb (155 g)	
	Capacity	60 GB	
	Height	0.374 in (9.5 mm)	
	Width	70 mm	
	Interface	ATA-5	
	Transfer Rate	Synchronous (maximum)	100 MB/s (Drive Capability)
		Security	ATA Security
	Seek Time (typical reads, including settling)	Single Track	3 ms
		Average	13 ms
		Maximum	25 ms
	Rotational Speed	4200 rpm	
	Logical Blocks	117,210,240	
	Operating Temperature	41° to 131° F (5° to 55° C)	
	Features	Security	ATA Security
40-GB (4200 rpm)	**Drive Weight**	0.21 lb (95 g)	
	Capacity	40 GB	
	Height	0.374 in (9.5 mm)	
	Width	2.75 in (70 mm)	
	Interface	ATA-5	
	Transfer Rate	Synchronous (maximum)	100 MB/s (Drive Capability)
		Security	ATA Security
	Seek Time (typical reads, including settling)	Single Track	3.0 ms
		Average	13 ms
		Maximum	25 ms
	Rotational Speed	4200 rpm	
	Logical Blocks	78,140,160	
	Operating Temperature	41° to 131° F (5° to 55° C)	

30-GB (4200 rpm)	**Drive Weight**	0.22 lb (99 g)	
	Capacity	30 GB	
	Height	0.374 in (9.5 mm)	
	Width	2.75 in (70 mm)	
	Interface	ATA-5	
	Transfer Rate	Synchronous (maximum)	100 MB/s (Drive Capability)
		Security	ATA Security
	Seek Time (typical reads, including settling)	Single Track	2.5 ms
		Average	12 ms
		Maximum	23 ms
	Rotational Speed	4200 rpm	
	Logical Blocks	58,605,120	
	Operating Temperature	41° to 131° F (5° to 55° C)	

Audio	**Hardware**	**Implementation**	Connexant SmartAMC CX20468-21 AC97 CODEC
		Audio Signal Link to CPU	Audio CODEC (AC) link
		Full Duplex	Full duplex audio recording and playback
		Stereo Inputs	Line In - 10K Impedance (min.)
		Mono Inputs	Microphone - 10K Impedance (min), with Port Replicator only.
		Stereo Outputs	Headphone jack, internal speaker, S/PDIF for Port Replicator only
		Analog Frequency Response	20 Hz - 20 kHz
	Audio Output Quality	**Frequency Response**	300 Hz - 20 kHz
		Signal to Noise Ratio	>94dB
		Total Harmonic Distortion	-50 dBFS (PC2001(Mobile PC) protocol)
		Noise Floor	
		Play/Record Sampling Rate(s)	7 kHz to 48 kHz
		AD/DA Resolution	Stereo full-duplex audio codec with 18-bit resolution
	Stereo Speaker	**Amplifier Power**	2-Watts (Normal), 2.5Watts (Maximum)
		Speaker Impedance	4-Ohms ± 15% at 1KHz
		Frequency Response	530 Hz - 20 kHz

Diskette Drive	**Diskette Size**	3.5 in	
	Height	0.5 in (12.7 mm)	
	Bytes per Sector	512	
	Sectors per track	High density	18 (1.44 MB)/15 (1.2 MB)
		Low density	9
	Tracks per side	High density	80 (1.44 MB)/80 (1.2 MB)
		Low density	80
	Read/Write heads	2	
	Access Times	Track-to track (high/low)	3 ms/6 ms
		Average (high/low)	94 ms/174 ms
		Settling time	15 ms
		Latency average	100 ms
External AC Adapter without Power Faction Correction	**Weight**	0.67 lb (0.304 kg)	
	Power Supply (Input)	Operating Voltage	100 to 240 VAC RMS
		Operating Current	1.7 A RMS
		Operating Frequency Range	47 to 63 Hz AC
Lithium-Ion Battery Pack (8-cell)	**Dimensions** (L x W x D)	5.25 x 3.63 x 0.75 in (13.4 x 9.2 x 1.9 cm)	
	Weight	0.96 lb (0.43 kg)	
	Energy	Voltage	14.8 V
		Amp-hour capacity	Typical 4.4 Ah
		Watt-hour capacity	Typical 64 Wh
	Temperature	Operating	32° to 140° F (0° to 60° C)
		Non-operating	-4° to 140° F (-20° to 60° C)
DVD/CD-RW Drive	**Center Hole Diameter**	15 mm	
	Disk Diameter	12 cm, 8 cm	
	Disk Thickness	1.2 mm	
	Track Pitch	1.6 μm	
	Access Times (typical reads, including settling)	Random CD	< 110 ms
		Full-Stroke CD	< 210 ms
		Random DVD	< 130 ms
		Full-Stroke DVD	< 225 ms
	Audio Output Level	0.7 – 0.9 Vrms	
	Cache Buffer	2 Mbytes (minimum)	
	Data Transfer Rate (typical, including settling)	CD-R (24X)	3600 KB/s (150 KB/s at 1X CD rate)
		CD-RW (10X)	1200 KB/s (150 KB/s at 1X CD rate)
		CD-ROM (24X)	3600 KB/s (150 KB/s at 1X CD rate)
		DVD (8X)	10,800 KB/s (1352 KB/s at 1X DVD rate)
		Normal PIO Mode 4 (single burst)	16.6 MB/s
	Start-up Time	Single	< 9 seconds (typical)
		Multi-Session	< 30 seconds (typical)
	Stop Time	< 6 seconds (typical)	

DVD-ROM Drive	**Center Hole Diameter**	0.59 in (1.5 cm)	
	Disk Diameter	12 cm/8 cm	
	Disk Thickness	1.2 mm	
	Track Pitch	0.74 µm (DVD)/1.6 µm(CD)	
	Access Times (typical reads, including settling)	Random (typical)	< 125 ms DVD Media
		Full-Stroke (typical)	< 225 ms DVD Media
		Random (typical)	< 100 ms CD Media
		Full-Stroke (typical)	< 175 ms CD Media
	Cache Buffer	512 KB/s (minimum)	
	Data Transfer Rate (typical, including settling)	Max 24X CD	3600 KB/s (150 KB/s at 1X CD rate)
		Max 8X DVD	10,800 KB/s (1352 KB/s at 1X DVD rate)
	Start-up Time	< 12 seconds Typical	
	Stop Time	< 3 seconds Typical	

DVD+RW Drive	**MultiBay Drive**	Dimensions (H x W x D)	0.5 x 5.21 x 4.97 in (1.27 x 13.25 x 12.61 cm)
		Weight	0.55 lb (0.25 kg)
	Center Hole Diameter	15 mm	
	Disk Diameter	12 cm/8 cm	
	Disk Thickness	1.2 mm	
	Track Pitch	0.74 µm	
	Access Times (typical reads, including settling)	Random CD	< 175 ms
		Full-Stroke CD	< 285 ms
	Audio Output Level	Line-out	0.7 Vrms
	Cache Buffer	128 KB/s (minimum)	
	Data Transfer Rate (typical, including settling)	DVD+R (2X max write)	2700 KB/s
		DVD+RW (2X max write)	2700 KB/s
		CD-R (16X max write)	2400 KB/s (150 KB/s at 1X CD rate)
		CD-RW (8X max write)	1200 KB/s (150 KB/s at 1X CD rate)
		CD-ROM (24X max read)	3600 KB/s (150 KB/s at 1X CD rate)
		DVD (8X max read)	10,800 KB/s (1352 KB/s at 1X DVD rate)
		Normal PIO Mode 4 (single burst)	16.6 MB/s
	Start-up Time	< 15 seconds	
	Stop Time	< 6 seconds	

24X CD-ROM Drive	**Applicable Disk**	CD-ROM (Mode 1, 2 and 3), CD-XA ready (Mode 2, Form 1 and 2), CD-I ready (Mode 2, Form 1 and 2), CD-R (read only), CD Plus, Photo CD (Single and Multi-session), CD-Extra, Video CD, CD-WO (fixed packets only), CD-Bridge	
	Center Hole Diameter	0.59 in (15 mm)	
	Disk Diameter	12 cm, 8 cm	
	Disk Thickness	0.047 in (1.2 mm)	
	Track Pitch	1.6 μm	
	Access Times (typical reads, including settling)	Random	< 110 ms
		Full-Stroke	< 220 ms
	Audio Output Level	Line-out	0.7-0.9 Vrms
	Cache Buffer	128 KB	
	Data Transfer Rate (typical, including settling)	CD-ROM	3600 KB/s Maximum
	Start-up Time	< 10 seconds	
	Stop Time	< 5 seconds	

Integrated Conexant 56K ACLink Modem	**Form Factor**	Integrated on motherboard
	Power Management Support	APM Revision 1.2, ACPI
	Approvals/ Certifications	UL, CSA, NEMKO, CCIB, Industry Canada, FCC Part 68, CTR21, FCC Part 15 Class B, Canadian ICES-003 Class B, C.I.S.P.R.22, Australian ACA, CE Mark, Other Countries
	Data Mode Capabilities	High speed 56K modem (a-law, mu-law)
		K56flex (a-law, mu-law)
		V.8bis
		V.80
		V44.bis, MNP5 (Compression)
		V42.bis, MNP5 (Compression)
		V.42 (LAPM, MNP2-4) (Error Correction)
		V.34 (file date: 10/96)
		Optional symbol rates: 2800, 3429 Asymmetric Symbol rates
		Synchronous primary channel data signaling rates: 3600, 31200 Automatic rate re-negotiation V.32bis V.32 V.23 V.22bis V.22 V.21 Bell 212A Bell 103J
	Fax Mode Capabilities	TIA-578-S (Class 1)
		T.30, T.4 (Group 3)
		V.17
		V.29
		V.27ter
		V.21 Channel 2
	Command Set	V.250 (Partial)
		TIA-602
		Identification: +GMI, +GMM, +GMR
		Port control: +IPR, +ICF, +IFC, +ILRR
		Modulation: +MS, +MR, +MA
		Error control: +ES, +ER, +EB, +ESR, +ETBM
		Data compression: +DS, +DR
		V.251

Integrated 10/100 NIC	**NIC Device Driver Name**	National Semiconductor Corp. DP83815/816 10/100 MacPhyter PCI Adapter
	Data Link Layers	IEEE 802.2 LLC SNAP
	Ethernet Features	10 Mbps Ethernet: IEEE 802.3 standard 10BASE-T 100 Mbps Ethernet: IEEE 802.3u standard 100BASE-TX Full Duplex at 10 and 100Mbps Auto-Negotiation Wake on LAN from Standby (S3) Lower Power State on Link Loss
	Software support	IBM LAN Server Version 1.2, 1.3, 2.0, 4.0 Microsoft NT 3.51, NT 4.0. Microsoft Windows 2000 Novell Netware 3.1x, 4.x, 5.x
	Protocol support	TCP/IP Novell IPX/SPX and Microsoft compatible Novel IPX ODI Microsoft NetBEUI IBM DLC

HP 802.11b WLAN	**WLAN Standard**	802.11b
	Frequency band	2.4 GHz
	Data rates	1, 2, 5.5, and 11 Mbps
	O/S Support	Microsoft Windows XP Professional Microsoft Windows XP Home Microsoft Windows 2000
	WiFi-certified	Yes (802.11b; WPA pending)
	Interface	MiniPCI Type III
	Chipset	Intersil Prism 2.5
	Security	Support for 802.1x authentication types EAP-TLS, PEAP, EAP-MD5, EAP-TTLS; support for up to 128 bit WEP encryption

HP 802.11b WLAN	**WLAN Standard**	802.11b
	Frequency band	2.4 GHz
	Data rates	1, 2, 5.5, and 11 Mbps
	O/S Support	Microsoft Windows XP Professional Microsoft Windows XP Home Microsoft Windows 2000*
	WiFi-certified	Yes
	Interface	MiniPCI Type III
	Chipset	Broadcom 4301/2050
	Security	Support for 802.1x authentication types EAP-TLS, PEAP, EAP-TTLS, Cisco LEAP** ; support for up to 128-bit WEP encryption, WPA

*Driver upgrade may be required for ratified IEEE 802.11g standard compliance. Visit www.hp.com/support/ to obtain driver updates for your notebook.

**Requires the use of a software supplicant: Broadcom 802.11b and 802.11g Network Adapters User Interface (provided by HP)

HP 54g WLAN W450	**WLAN standard**	IEEE 802.11b, 802.11g
	Frequency	2.4 GHz
	Data rates	802.11b: 1, 2, 5.5, and 11 Mbps 802.11g: 1, 2, 5.5, 6, 9, 11, 12, 18, 24, 36, 48, 54 Mbps
	O/S Support	Microsoft Windows XP Professional Microsoft Windows XP Home Microsoft Windows 2000
	WiFi-certified	Yes (802.11b, WPA; 802.11g pending)
	Interface	MiniPCI Type III
	Chipset	Broadcom 4306B0/2050 chipset
	Security	Support for 802.1x authentication types EAP-TLS, PEAP, EAP-MD5, EAP-TTLS; support for up to 128-bit WEP encryption, WPA

NOTE: Driver upgrade may be required for ratified IEEE 802.11g standard compliance. Visit www.hp.com/support/ to obtain driver updates for your notebook.

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